

### **REMARKS**

Claims 1 and 3-20 were previously pending in this application. By this amendment, claims 21-36 have been added. As a result, claims 1 and 3-36 are pending with claims 1, 8, 10, 14, and 28 being independent claims.

Claims 1, 8, 10, and 14 have been amended herein. Each of claims 1, 10, and 14 has been amended to clearly distinguish over the cited art, as well as to clarify the language of the claim. Claim 8 has been amended merely to clarify the language of the claim and not to distinguish over the prior art. No new matter has been added.

#### **I. Rejections Under 35 U.S.C. §102(a)**

Claims 1, 6, 7, 10-15, and 18-20, including independent claims 1 and 10, are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,838,758 ("Krug"). Claims 1 and 10 have been amended to clearly distinguish over Krug.

##### **a. Claim 1 and Corresponding Dependent Claims**

Claim 1, as amended, is directed to a method for analyzing an object comprising prescanning the object using a multiple energy X-ray device to determine information indicative of effective atomic number characteristics of the object and transmitting the information to a processor coupled to a computed tomography device, wherein at least a portion of the multiple energy x-ray device is not common to the computed tomography device.

In the portion newly cited by the Examiner, Krug discloses that a dual energy x-ray inspector device 1004 may be deployed to perform CT scanning when required (Col. 32, lines 38-40). The Examiner alleges that both the "multiple energy X-ray device" and "computed tomography device" recited in claim 1 may be read on the dual energy x-ray inspector device 1004 disclosed in Krug. Applicants have amended claim 1 to preclude such a reading.

In particular, Krug does not disclose prescanning the object using a multiple energy X-ray device to determine information indicative of effective atomic number characteristics of the object and transmitting the information to a processor coupled to a computed tomography device,

*wherein at least a portion of the multiple energy x-ray device is not common to the computed tomography device*, as recited in claim 1. Accordingly, claim 1 is patentable over Krug.

In view of the foregoing, withdrawal of the rejection of claim 1 is respectfully requested. Claims 3-9 and 15-17 depend from claim 1 and are allowable for at least the same reasons.

b. Claim 10 and Corresponding Dependent Claims

Claim 10, as amended, recites an apparatus for analyzing an object comprising a multiple energy prescanner that prescans the object, and a computed tomography device that scans one or more areas of interest of the object based on information indicative of effective atomic number characteristics of the object transmitted from the multiple energy prescanner, wherein at least a portion of the multiple energy prescanner is not common to the computed tomography device.

The Examiner alleges that both the “multiple energy X-ray device” and “computed tomography device” recited in claim 10 may be read on the dual energy x-ray inspector device 1004 disclosed in Krug. Similar to claim 1, Applicants have amended claim 10 to preclude such a reading.

In particular, Krug does not disclose an apparatus for analyzing an object comprising a multiple energy prescanner that prescans the object, and a computed tomography device that scans one or more areas of interest of the object based on information indicative of effective atomic number characteristics of the object transmitted from the multiple energy prescanner, *wherein at least a portion of the multiple energy prescanner is not common to the computed tomography device*. Accordingly, claim 10 is patentable over Krug.

In view of the foregoing, withdrawal of the rejection of claim 10 is respectfully requested. Claims 11-13 and 18-20 depend from claim 10 and are allowable for at least the same reasons.

c. Claim 14

Claim 14, as amended, recites an apparatus for analyzing an object comprising a multiple energy prescanner a computed tomography device, wherein at least a portion of the multiple energy prescanner is not common to the computed tomography device. Information indicative of

at least one metal artifact is transmitted from the multiple energy prescanner to a processor coupled to the computed tomography device.

The Examiner alleges that both the “multiple energy X-ray device” and “computed tomography device” recited in claim 14 may be read on the dual energy x-ray inspector device 1004 disclosed in Krug. Similar to claims 1 and 10, Applicants have amended claim 14 to preclude such a reading.

In particular, Krug does not disclose an apparatus for analyzing an object comprising a multiple energy prescanner and a computed tomography device, *wherein at least a portion of the multiple energy prescanner is not common to the computed tomography device*, and wherein information indicative of at least one metal artifact is transmitted from the multiple energy prescanner to a processor coupled to the computed tomography device. Accordingly, claim 14 is patentable over Krug.

In view of the foregoing, withdrawal of the rejection of claim 14 is respectfully requested.

## II. Rejections Under 35 U.S.C. §103(a)

Claims 3-4, 8-9, and 16-17, including independent claim 8, are rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,838,758 (“Krug”) in view of U.S. Patent No. 5,243,664 (“Tuy”). Claim 5 is rejected under 35 U.S.C. §103(a) as being obvious over Krug in view of Tuy and further in view of U.S. Patent No. 5,905,809 (“Timmer”). The rejection of independent claim 8 is respectfully traversed.

### a. Claims 3-5 and 16-17

Claims 3-5 and 16-17 depend from independent claim 1, and are therefore allowable for at least the same reasons discussed above in connection with claim 1.

### b. Claim 8 and Corresponding Dependent Claim 9

Claim 8 is directed to a method for analyzing an object, comprising prescanning the object using a multiple energy X-ray device to determine prescan information, transmitting the

prescan information to a processor coupled to a computed tomography device, performing a computed tomography scan of at least a portion of the object based on the prescan information, wherein the computed tomography scan generates computed tomography scan data and is performed using the computed tomography device, and performing a metal artifact correction on the computed tomography scan data based on the prescan information.

The Office Action concedes that Krug fails to teach performing a metal artifact correction on a computed tomography scan based on prescan information. However, the Office Action alleges that it would have been obvious to a person of ordinary skill in the art to perform a metal artifact correction based on prescan information since Tuy discloses that a computed tomography image that includes metallic objects would have severe artifacts.

Applicants respectfully disagree that any combination of Krug and Tuy teaches or suggests performing a metal artifact correction on a computed tomography scan based on prescan information, as recited in claim 8. The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art (MPEP §2143.01). Tuy discloses performing a metal artifact correction based on an original set of CT data that is also used to generate the CT image. Tuy does not disclose performing a metal artifact correction based on prescan information. Thus, it is respectfully asserted that the combined teachings of Krug and Tuy, at most, may have motivated a person of ordinary skill in the art to modify the Krug system to perform metal artifact correction based on the CT scan information generated in Krug, because that is the manner suggested in Tuy, and there is no suggestion in the references to do otherwise (e.g., based on prescan information).

In view of the foregoing, no combination of Krug and Tuy teaches or suggests performing a metal artifact correction on a computed tomography scan *based on prescan information*, as recited in claim 8. Accordingly, withdrawal of the rejection of claim 8 is respectfully requested.

Claim 9 depends from claim 8 and is allowable for at least the same reasons.

### III. New Claims

Claims 21-36 have been added to further define Applicants' contribution to the art. No new matter has been added.

Claims 21-23, 24, 25, and 26-27 are believed to be allowable at least on the basis of their dependency from independent claims 1, 8, 10, and 14, respectively.

Independent claim 28 is believed to be allowable because none of the prior art of record discloses or suggests prescanning an object using a multiple energy X-ray device to determine information indicative of effective atomic number characteristics of the object, transmitting, to a device that is separate from and coupled to the multiple energy X-ray device, a transmission that is based at least partially on the information, and using the information received at the device to make at least one decision relating to further analyzing of the object, *the at least one decision comprising a decision other than determining a portion of the object to be scanned by a computed tomography device*. Claims 29-36 depend from claim 28 and are believed to be allowable for at least the same reasons.

### Conclusion

In view of the foregoing, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicants' attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed

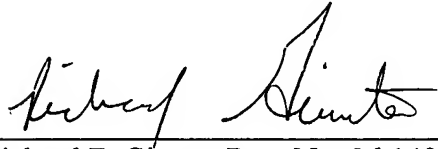
Serial No.: 10/717,051  
Conf. No.: 7442

- 13 -

Art Unit: 2882

check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,  
*Richard R. Bijjani et al., Applicants*

By:   
Richard F. Giunta, Reg. No. 36,149  
Wolf, Greenfield & Sacks, P.C.  
600 Atlantic Avenue  
Boston, Massachusetts 02210-2211  
Telephone: (617) 720-3500

Docket No. L0632.70001US04  
Date: January 7, 2005  
**x01/07/05**